CLIMATE HOUSEHOLD FINANCE

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Numerous research topics for Climate HF

- Physical risk: arising from physical impact on real assets (homes, private businesses).
- Transition risk: arising from the cost of potential policy or regulatory interventions
- These affect households through many channels:
  - *Consumption possibilities (supply disruptions)*
  - *Uninsured expenditure shocks*
  - *Employment and income shocks (e.g., plant closures, relocation+search)*
  - *Wealth shocks: shocks to the value of*
    - Real assets
    - Financial assets (e.g., stocks and bonds)
    - Liabilities: mortgage and loan availability and terms facing consumers
    - All these can occur ***even without a physical disaster!***
      - *Changes in environmental regulations*
      - *Changes in climate beliefs/perceptions*
      - *Changes in attention to climate change*
    - Insurance could mitigate some effects
- Wealth inequality changes
  - *Arising from different asset composition*
  - *Or from different loan term adjustments and repayment responses*
- Potentially important mediating factors:
  - *Peer effects on climate awareness and response: only for the educated?*
  - *Green financial literacy: about assets, loans, insurance, behavior*
  - *Green financial advice: lack of knowledge, financial misconduct, mismatch*
  - *Green financial product design and "default options": e.g., insurance products*

Climate effects on incomes and house prices

- Employment incomes:
  - *Natural disasters can lower employment incomes in affected regions (Borgschulte, Molitor and Zou, 2024)*
- House prices:
  - Ortega & Taspinar (2018): following Hurricane Sandy in NYC there was
    - *a significant (17-20%) and permanent relative price decline of damaged NYC properties*
  - *Not a linear relationship:*
    - Issler et al (2014) **find an increase in house prices and size in wildfire treatment areas 5 years after the fire**:
      - *due to reconstruction, safety requirements, and insurance money.*
      - *However, considerable exit of insurance companies from the areas!*
  - *Measures to mitigate climate risk boost house prices:*
    - Benetton et al (2023): a sea wall built in Venice led to a 4.5% increase in the value of the Venice housing stock

- But this is not all!

Climate effects on house prices: beliefs and attention

- *Changes in **beliefs** about climate change may also have house price effects, even though this is debated in the literature:*
  - Ortega & Taspinar (2018): Gradual losses of non-damaged properties in the flood zones converge to the effect on the damaged properties
  - Baldauf et al (2020): A 1SD increase in the share of believers in climate change is associated with a 7% decrease in house prices for homes projected to be inundated.

- *Changes in the **attention** to climate factors also have price effects*
  - Giglio et al (2020): "Climate Attention Index" constructed by calculating the proportion of for-sale listings with property descriptions that contain climate risk-related words and phrases such as "hurricanes", "FEMA", "floodplain", and "flood risk."
    - *a doubling in the Climate Attention Index (i.e., a doubling in the share of listings that mention climate risk- related words) is associated with a relative 2.4% decline in the transaction prices of properties in the flood zone.*

Financial asset prices and household participation

- Several authors find a greenium (lower expected return) for stocks of firms aiming at reducing emissions and energy use.
  - *However, considerable heterogeneity among retail investors' views even in the same country (Aron-Dine et al., 2025 for DE; Giglio et al. 2023 for US).*
  - *Aron-Dine et al. (2025):*
    - 34% of German households own some green assets, which comprise 11% of aggregate household financial wealth.
    - More than half of green investment is in equity, compared to one-third overall.
    - The greenium is mostly due to optimism about green returns rather than preference for green assets.
    - Only 5% of households have a green bank deposit account, but there is pent up demand for green deposit accounts.
    - Information on green assets could significantly increase demand for them.

- Bond market:
  - *"Green bonds" (the first by EIB in 2007):*
    - **proceeds are expressly linked to environmentally friendly projects** (e.g., renewable energies, clean transportation)
      - *Baker et al. (2018):*
        - No universally accepted classification system for green bonds!
        - green bonds trade at lower yields (eventually) than non-green bonds with similar attributes

Financial asset prices and household participation

- Having high expectations of the degree and pace of the energy transition leads to (Cecarrelli and Ramelli, 2024):
  - *expectations of a higher green premium*
  - *participation in green funds*
    - even after controlling for investor environmental preferences, climate concerns, political preferences and other characteristics

- Changes in attention to climate change may also influence financial prices:
  - *Kostovetsky et al., 2024:*
    - They develop a newspaper-based measure of regional variation in attention
    - Exploit exogenous changes due to change in newspaper ownership or to changes in climate attention in areas socially connected to the area of the local newspaper
    - They find that higher local climate attention encourages investment in ESG-focused ETFs.
  - *Abnormally warm weather also tends to lead to changes in attention to climate risk and to stock market sales of carbon-intensive firms (Choi et al, 2020).*

Insurance

- Disaster insurance against floods and wildfires can mitigate wealth shocks
  - *Sometimes imposed by mortgage providers.*
- Increased demand for disaster insurance following occurrence of a disaster:
  - E.g., Gallagher (2014): homeowner insurance take-up increases not only in the recently flooded areas but also in unflooded ones that are part of the same TV market: (2/3)* effect
- The availability of private insurance is far from guaranteed!
  - *Kousky et al (2018): NFIP created in 1968 stands ready to write residential flood insurance policies and has been the only option for decades, but since 2000, a small private market has emerged.*
  - *Still not enough and will never be enough!*
    - 3.5-4.5% of total residential flood insurance by 2018.
  - *Big private insurers don't want to enter*
    - also because of reputational cost of changing terms as they experiment with their policies.
- In the absence of public insurance:
  - Government discretionary spending following disasters!

Climate effects on household liabilities

Banks

- Bank lending terms:
  - *Acharya et al. (2023): Banks face because of climate change:*
    - credit risk (inability of customers to repay loans)
    - market risk (changes in market valuation of financial assets held by the banks).
  - *Sparse literature on how banks adjust their lending rates in response to climate change*
    - Beyene et al (2023): captive banks improved terms following diesel scandal, while others did not adjust. When circulation restrictions were introduced, independent banks tightened terms, but captive ones did not.

Climate effects on household liabilities
Households

- Natural disasters can:
  - *lower employment incomes in affected regions (Borgschulte, Molitor and Zou, 2024)*
  - *limit household ability to meet their mortgage repayment obligations, causing declines in credit scores and deterioration in mortgage performance (Ratcliffe et al., 2020)*
  - *and force some to declare bankruptcy and face foreclosure (Issler et al., 2024; Billings, Gallagher and Ricketts, 2022) .*
- Deng et al. (2023) consider the effects of extreme temperatures on defaults from **labor income interruptions, house price overreaction, as well as mortgage prepayments and relocations**:
  - *A one-day-per-month increase in the number of high-temperature days generates a 6.9% increase in the rate of permanent default (below-water mortgages) or 2.6% increase in the rate of loan prepayment (for above-water mortgages).*

Effects on the distribution of wealth

- Climate change and natural disasters affect prices of unequally owned assets and induce changes in liabilities.
- Hisao (2024): "The rich displace the poor in pursuit of high ground"
  - *The rich move to safer areas and bid house prices up.*
  - *The poor must live in the higher-risk areas with depressed house prices.*
- Natural disasters also induce differential changes in liabilities:
  - *An et al. (2024): Following the 2018 Camp Fire in California,*
    - Homeowners paid down their credit card debt (cashed insurance)
    - Renters, esp. those with low credit scores, experienced delinquencies.

The role of peer effects and life experiences

- Peer effects
  - *Hu (2022): A major Boston flood inspires **socially connected peers** in California to take flood insurance.*
    - Effect is increasing in the seriousness of the flood, the degree of connectedness, and quite persistent (policy renewals).
  - *Xu and Box-Cuillard (2024): US hurricanes Harvey and Irma in 2017 had a positive effect on flood insurance take-up in both flooded and unflooded areas, which depended on social proximity to the flooded.*
  - *Social multiplier:*
    - Good, but it is the mostly the wealthy, educated, and climate-savvy who tend to respond!
- Life experiences
  - *Bianchi and Liu (2022): Investors in China living north of a river that experienced high pollution have a significantly higher demand for ESG stocks than those living south.*
  - *More recent life experiences matter more.*
  - *Other investor characteristics do not matter much.*

The changing nature of investors

Retail investors YOLO for environmental and social causes

Ricci & Sautter (2021, 2023)

- Millennials are projected to inherit over $68 trillion by 2030 in the “Great Wealth Transfer” while GenZ’ers’ income is expected to grow to over $70 trillion by 2040.
- They are ”wireless investors”:
- They value activism: in-person and social media
  - *GenZ’ers are called “clicktivists.”*
- As investors, both hold corporations to a different standard than other generations
  - *68% believe that CEOs should repair “societal problems” when the government does not (Annual Edelman Trust Barometer for 2021)*
  - *65% also reported that “CEOs should hold themselves accountable to the public,” rather than only to investors.*
- A Pew Research Center study (Tyson et al, 2021) found that Millennials and GenZ’ers “
  - *are **talking more** about the need for action on climate change*
  - *among social media users, they are **seeing** more climate change content online*
  - *and they are **doing more** to get involved with the issue through activities, such as volunteering and attending rallies and protests.”*
- 89% of Millennials consider the company’s history regarding ESG as vital information when deciding where to invest while 80% of GenZ’ers consider ESG values before investing. (BofA).

How to help retail investors face climate change?
A fresh green look at long-standing HF topics

- Green financial literacy versus
  - *Green financial advice versus*
    - Green peer advice versus
      - *Simpler financial products and default options, including insurance*

- Links to household and aggregate financial stability.

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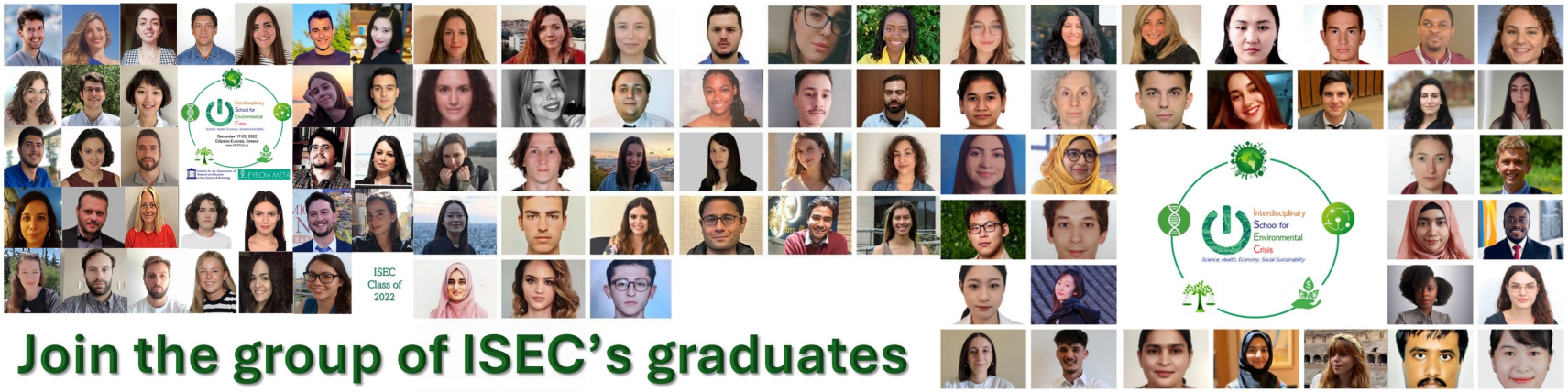

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